

**Energy Policy Act of 2005, Section 1234
Economic Dispatch Study**

**Questions for Stakeholders
Responses of the North Carolina Utilities Commission**

1) What are the procedures now used in your region for economic dispatch? Who is performing the dispatch (a utility, an ISO or RTO, or other) and over how large an area (geographic scope, MW load, MW generation resources, number of retail customers within the dispatch area)?

Electric suppliers, or load serving entities, in North Carolina include vertically-integrated investor-owned utilities (Duke Energy, Progress Energy, and Dominion North Carolina Power), municipal electric utilities, and rural electric cooperatives. Dominion recently joined PJM Interconnection, LLC and participates in the PJM regional transmission organization (RTO).

Generation to serve all consumers in North Carolina is dispatched using “security constrained economic dispatch.” This dispatch is performed by Duke and Progress on behalf of themselves and the municipal utilities and cooperatives within their respective control areas. Duke operates nearly 20,000 MW of generation within its 22,000 square mile service territory in North and South Carolina; Progress, 13,400 MW in 34,000 square miles. Dominion, as a participant in PJM’s markets, further utilizes “bid-based security constrained economic dispatch.”

Under “security constrained economic dispatch,” utilities first consider a myriad of operational factors (including incremental heat rates, incremental fuel prices, emission costs, and purchase costs) to dispatch all available on-line generating resources and power purchases to achieve the lowest possible cost to customers. After this “pure” economic dispatch is developed, reliability and other constraints are incorporated into the dispatch. If reliability or any other constraints are violated, the economic dispatch is modified such that all constraints are satisfied at the minimum increase in cost.

2) Is the Act’s definition of economic dispatch (see above) appropriate? Over what geographic scale or area should economic dispatch be practiced? Besides cost and reliability, are there any other factors or considerations that should be considered in economic dispatch, and why?

Section 1234 of the Energy Policy Act of 2005 defines economic dispatch as “the operation of generation facilities to produce energy

at the lowest cost to reliably serve customers, recognizing any operational limits of generation and transmission facilities.”

The definition in the Act, which includes a consideration of reliability and “operational limits of generation and transmission facilities,” more accurately defines what is typically referred to as “security constrained economic dispatch.” As described in Question No. 1 above, this “security constrained economic dispatch” is appropriately utilized by the utilities in North Carolina to ensure least cost reliable electric service to retail consumers.

The geographic scale or area over which such economic dispatch should be practiced will appropriately vary from region to region and state to state. Economic dispatch might be centrally administered over a larger region where the states have restructured their electric industry and/or where the transmission owners have joined an RTO. In other regions, where the states have not restructured and/or where the transmission owners have not elected to join an RTO, individual control areas might be the proper scope of economic dispatch. For example, in North Carolina, which has not restructured its electric utility industry, the proper scope for economic dispatch for those utilities that have not joined an RTO would be the individual control area within which the utilities have a load service and balancing obligation.

While cost and reliability are the primary considerations for economic dispatch, other factors must be considered by a utility in determining the actual dispatch order of its available generating resources to achieve least cost reliable electric service. Some of these additional factors include: environmental constraints, fuel inventory or delivery constraints, purchase and sales opportunities, low load stability risk, ramp requirements, weather conditions (such as approaching hurricanes or tornado threats) and conditions at a plant that might increase the risk of a unit trip (such as a recent return from a major overhaul or a boiler tube leak).

3) How do economic dispatch procedures differ for different classes of generation, including utility-owned versus non-utility generation? Do actual operational practices differ from the formal procedures required under tariff or federal or state rules, or from the economic dispatch definition above? If there is a difference, please indicate what the difference is, how often this occurs, and its impacts upon non-utility generation and upon retail electricity users. If you have specific analyses or studies that document your position, please provide them.

In North Carolina, economic dispatch procedures generally do not differ for different classes of generation, such as utility-owned

versus non-utility generation. Generally speaking, utilities are required to dispatch generators in merit order based on cost as described above. The exception to this rule would be for qualifying facilities under the Public Utility Regulatory Policies Act of 1978 (PURPA) – the output of which utilities are required to purchase under federal law. Otherwise, utilities are required to take advantage of power purchases from other utilities and non-utility generators when it would result in lower operating costs while maintaining system reliability. A failure to do so subjects the utility to a risk of disallowance of certain costs for ratemaking purposes. In addition, before obtaining a certificate of public convenience and necessity (CPCN) from the North Carolina Utilities Commission to construct new generating capacity, a utility must demonstrate that it has considered power purchases as an alternative to the utility self-build option.

4) What changes in economic dispatch procedures would lead to more non-utility generator dispatch? If you think that changes are needed to current economic dispatch procedures in your area to better enable economic dispatch participation by non-utility generators, please explain the changes you recommend.

There is no agreement that any changes should be made to lead to more non-utility generator dispatch in all states or regions of the country. As indicated in response to Question No. 3, non-utility generation is required to be considered as an alternative by traditional utilities both at the time a decision is made to purchase or build new capacity and as well as on an ongoing basis as opportunities for economic purchases arise. Structural changes, such as the required participation in a power exchange or bid-based market, should not be mandated. Rather, states such as North Carolina, which has intentionally elected to retain a traditional electric industry structure, should be allowed to continue to evaluate for itself whether to implement such changes on behalf of its citizens and ratepayers. For this reason, no mandated changes in economic dispatch are warranted at this time.

5) If economic dispatch causes greater dispatch and use of non-utility generation, what effects might this have – on the grid, on the mix of energy and capacity available to retail customers, to energy prices and costs, to environmental emissions, or other impacts? How would this affect retail customers in particular states or nationwide? If you have specific analyses to support your position, please provide them to us.

Changes to the current “security constrained economic dispatch” as performed in North Carolina intended to cause “greater dispatch

and use of non-utility generation” are not appropriate. As described above, North Carolina utilities are already required to dispatch economically. Any change that would cause reliability to decrease or overall costs to increase must be rejected. As described in the response to Question No. 1, utilities in North Carolina currently consider a myriad of factors – including, among others, costs, availability, emissions and reliability – in determining generation dispatch order in order to provide least cost reliable electric service to their consumers.

6) Could there be any implications for grid reliability – positive or negative – from greater use of economic dispatch? If so, how should economic dispatch be modified or enhanced to protect reliability?

It is unclear what is meant by “greater use of economic dispatch.” As described in response to Question No. 1, North Carolina utilities are already required to utilize “security constrained economic dispatch” to provide least cost reliable electric service to their retail consumers. The use of “pure” economic dispatch without recognition of constraints such as reliability, environmental cost and emission limitations could result in higher customer energy costs, consumption of more expensive fuels, reduced reliability or greater emissions. Any such changes would not be appropriate.